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# FORCE STRUCTURE

## Navy Is Complying With Battleship Readiness Requirements



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National Security and  
International Affairs Division

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April 12, 1999

The Honorable John Warner,  
Chairman  
The Honorable Carl Levin,  
Ranking Minority Member  
Committee on Armed Services  
United States Senate

The Honorable Floyd Spence,  
Chairman  
The Honorable Ike Skelton,  
Ranking Minority Member  
Committee on Armed Services  
House of Representatives

This letter responds to one of our three reporting requirements stated in section 1015 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999. The reporting requirements involve issues associated with the status and future of the Navy's Iowa class battleships. This letter addresses our requirement to report on the Navy's compliance with battleship readiness requirements contained in section 1011 of the National Defense Authorization Act for Fiscal Year 1996. Specifically, we evaluated the Navy's compliance with the requirements to (1) list and maintain at least two Iowa class battleships on the Naval Vessel Register (NVR) that are in good material condition and capable of providing adequate fire support for an amphibious assault; (2) retain the existing logistical support necessary to keep at least two Iowa class battleships in active service, including technical manuals, repair and replacement parts, and ordnance; and (3) keep the two battleships on the register until the Secretary of the Navy certifies that the Navy has within the fleet an operational surface fire support capability that equals or exceeds the fire support capability that the Iowa class battleships would be able to provide for Marine Corps amphibious assaults and operations ashore. The NVR is the official inventory of ships and service craft in custody or titled by the Navy and includes those assigned to the Military Sealift Command.

Section 1015 also requires us to report on (1) the Navy's plans for executing the naval surface fire support mission and the short-term and long-term costs associated with these plans and (2) the Navy's assessment of alternative methods and costs for executing the fire support mission,

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including the alternative of reactivating two battleships. As agreed with your offices, these issues will be addressed in separate reports.

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## Results in Brief

The Navy is complying with the battleship readiness requirements stated in the National Defense Authorization Act for Fiscal Year 1996. The Navy placed two Iowa Class battleships on the register about 2 years after the act's requirement took effect. Both ships are in good material condition and have been maintained on the register in the highest readiness category for inactive ships. The Navy's Board of Inspection and Surveys had declared all four of the Iowa Class battleships fit for further service at the time of their last decommissioning.

The Navy is retaining the existing logistical support necessary for active operations of the battleships, including technical manuals, repair and replacement parts, and ordnance. The battleship logistics support structure is largely intact, and according to the Navy, production of 16-inch ammunition and propellant could be resumed within a few months. Further, two Navy shipyards have the capabilities and facilities needed to work on battleship-size vessels.

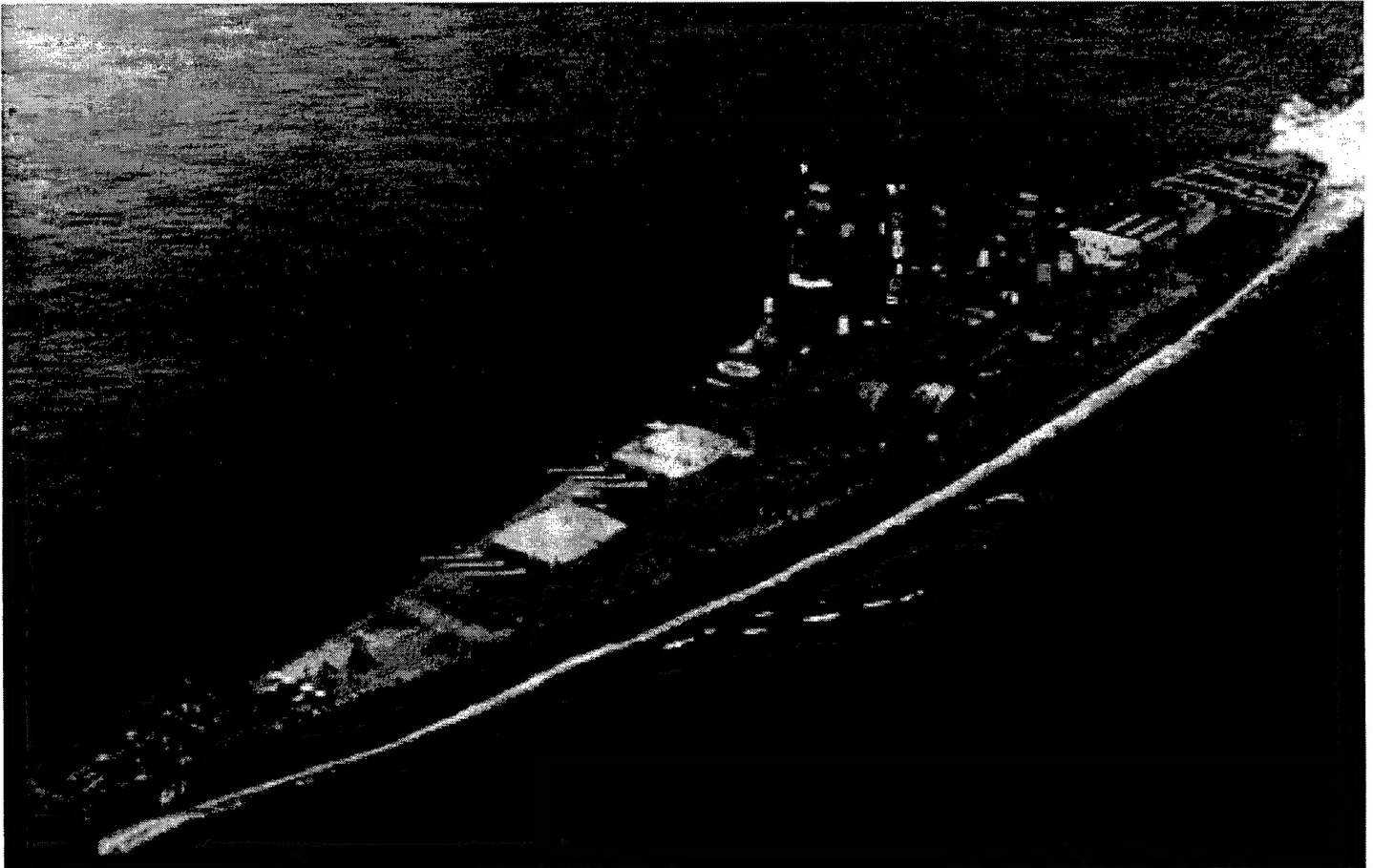
According to officials, the Navy plans to keep the battleships on the register until its current naval surface fire support gun and missile development programs achieve operational capability, which is estimated to occur between fiscal year 2003 and 2008. At that time, it plans to remove the battleships from the register and certify that the fleet has an operational surface fire-support capability that equals or exceeds that of the battleships. In the interim, the Navy does not intend to return any battleships to active service. The Navy states that the battleships cannot meet current naval surface fire support requirements for range and accuracy and cost too much to operate. The Marine Corps supports this position.

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## Background

Four Iowa class battleships were built for the Navy during World War II. Each ship is equipped with nine 16-inch guns that can fire a variety of projectiles weighing up to 2,700 pounds to a range of 23 nautical miles (see fig.1). Although they were designed primarily for combat with other ships, the battleships have been used to strike shore targets and provide fire support to maneuvering ground troops.

Figure 1: U.S.S. Iowa



Source: U.S. Navy.

Since their construction, these ships have been decommissioned and reactivated many times and were in inactive service more than in active service. For example, the *U.S.S. Iowa* was in inactive service twice as long as it was in active service (36 years, 9 months, compared to 18 years, 11 months). During the 1980s, the Navy spent about \$1.7 billion to modernize and reactivate the four Iowa class battleships—*U.S.S. Iowa*, *U.S.S. New Jersey*, *U.S.S. Missouri*, and *U.S.S. Wisconsin*. During their reactivation, each of these ships was fitted with 16 Harpoon and 32 Tomahawk missile launchers, along with updated communications, fire control, and target acquisition systems. After the Cold War, the Navy again decommissioned these ships, but it kept them in a mobilization status and

maintained their logistical support structure. The *U.S.S. Missouri* and the *U.S.S. Wisconsin* were used in the Gulf War to provide Tomahawk missile strikes and naval surface fire support (NSFS) to ground forces. The Navy decommissioned these two battleships in 1991 and 1992. All four were removed from the register in 1995.

Ships removed from the NVR can be disposed of by donation and used as memorials, sold to foreign governments, or scrapped. When the *Iowa* class battleships were removed in 1995, the Navy intended for them to be donated and used as memorials. When the battleships were listed on the NVR in February 1998, they were placed in maintenance category "B," which is the highest category for a mobilization asset. To preserve vessels in a category "B," the Navy dehumidifies them, provides a special protection to the hull, and installs fire and flooding alarms.

## Battleships in Good Condition Added to Naval Register

About 2 years after section 1011 was enacted, the Navy reinstated two battleships on the NVR. Navy officials said part of the delay in complying with section 1011 was caused by the 1996 Department of Defense (DOD) Appropriations Act's prohibition against spending any of the appropriated funds to return any *Iowa* class battleships to the NVR or to retain the logistical support necessary to support such a battleship in active service. There was also a lack of action on the Navy's part to reinstate the battleships on the NVR after the funding prohibition expired. However, the Navy had suspended demilitarization and stopped the disposal of parts before section 1011 was enacted.

According to the Navy, as originally drafted, section 1011 would have required the Navy to list the two battleships that were in the "best" condition on the NVR. These were the *U.S.S. Missouri* and the *U.S.S. Wisconsin*. However, since the *U.S.S. Missouri* was in the process of being donated, the requirement was changed from "best" to "good" condition in the final bill. The Navy's Board of Inspection and Surveys had declared all four of the remaining *Iowa* class battleships fit for further service at the time of their last decommissioning. Since the Navy considered all four battleships to be in good condition, it placed the *U.S.S. New Jersey* and the *U.S.S. Wisconsin* on the NVR and cleared the way for donation of the *U.S.S. Missouri*.

Since February 1998, the Navy has listed these two battleships (*U.S.S. Wisconsin* and *U.S.S. New Jersey*) on the NVR in mobilization category B, the highest readiness category for inactive ships that can be

recalled to active service in an emergency. Before section 1011 was enacted, the Navy had begun to demilitarize the *U.S.S. New Jersey* by welding down the training mechanisms of its 16-inch guns. Despite this action, the Navy selected the *U.S.S. New Jersey* over the *U.S.S. Iowa*, which had one of its 16-inch gun turrets rendered inoperable, due to an earlier explosion<sup>1</sup> because repair cost estimates for the latter were greater. In the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, Congress directed the Navy to substitute the *U.S.S. Iowa* for the *U.S.S. New Jersey* on the NVR and to arrange for its donation. The Navy made this change in January 1999. Officials from the Navy Inactive Fleet said the three battleships are in good material condition and the two listed on the NVR are being maintained in the highest readiness category for inactive ships. Our visual inspection of these three ships and our review of documentation on the ships' condition confirm the Navy's statement.

## Necessary Logistic Support Being Retained

The Navy is complying with the section 1011 requirement to retain the existing logistical support necessary to keep at least two operational Iowa class battleships in active service, including technical manuals, repair and replacement parts, and ordnance. The Navy estimates that it costs about \$600,000 annually to maintain three battleships in the inactive fleet and about \$440,000 per year to store and maintain the 16-inch ammunition and propellant powder. The Navy did not provide an estimate for sustaining the other parts of the battleship logistic support structure.

The Navy is storing most of the battleship repair parts inventory in the climate-controlled interiors of the *U.S.S. New Jersey* and the *U.S.S. Wisconsin*. Technical manuals for the battleships have also been consolidated on these two ships. Additional spare and replacement parts are stored primarily at naval facilities at Bell, California; Bremerton, Washington; and Crane, Indiana. According to the Navy, the current inventory of unique and other spare parts is adequate to keep two battleships in active service for a number of years. If needed, additional battleship-unique parts could be manufactured, or made available by cannibalizing ships that have been donated, as was the practice when the Navy reactivated the Iowa class ships in the 1980s.

<sup>1</sup>See *Issues Arising From an Explosion Aboard the Battleship Iowa* (GAO/NSIAD-91-4, Jan. 29, 1991).

There was some concern about the availability of very large "hammerhead" cranes needed for future battleship repair work (e.g., repair of the damaged turret on the *U.S.S. Iowa*). We verified with Navy officials that the naval shipyards at Norfolk, Virginia, and Bremerton, Washington, have cranes that are large and powerful enough to service battleships.

The Navy is currently maintaining 26 usable 16-inch gun barrel spares at Hawthorne, Nevada, and Dahlgren and Portsmouth, Virginia. About 15,000 rounds of usable 16-inch gun ammunition and associated propellant charges are stored at the Army Ammunition Plant, McAlester, Oklahoma, the Crane Army Ammunition Activity (CAAA), Crane, Indiana, and the Hawthorne Army Depot, Nevada. CAAA still maintains a 16-inch ammunition repair and renovation capability and operable propellant mixing and stacking machinery. Thus, according to CAAA officials, production of 16-inch projectile bodies could be restarted in only a few months, at an estimated cost of \$7,000 per projectile. Final assembly of the 16-inch projectiles would be performed at the Army Ammunition Plant in McAlester, Oklahoma. Officials there said that the explosive pressing and fuse installation assembly line could be restarted within a year, at an estimated average cost of \$3,000 per projectile, and that they would also need about \$600,000 to restore and modernize the production facility.

The Navy has estimated the cost of maintaining battleships in the inactive fleet at about \$200,000 per ship, per year, which excludes the cost of sustaining the battleship logistics support structure. Because the ships are maintained under dehumidification and special rust protection, maintenance of parts on board costs nothing extra. According to CAAA officials, DOD's cost to store and maintain the 16-inch ammunition and propellant powder there is about \$294,000 per year. Annual storage costs to DOD for 16-inch ammunition and propellant at the Hawthorne Army Depot and the McAlester Army Ammunition Plant are about \$121,000 and \$26,000, respectively.

## Navy Plans to Keep Battleships on the Register

Section 1011 required the Navy to list and keep two battleships on the NVR until the Secretary of the Navy certified that the Navy has within the fleet an operational surface fire support capability that equals or exceeds the fire support capability that the Iowa class battleships would be able to provide for Marine Corps amphibious assaults and operations ashore. With the retirement of the battleships, the Navy's existing surface fire support capabilities are limited to 5-inch/54 caliber guns and munitions on cruisers



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and destroyers. These munitions, however, lack the range, accuracy, and lethality the Marine Corps says it needs for naval fire support.

To address this deficiency, the Navy initiated a near- and long-term program to develop NSFS capabilities. The near-term phase of the program consists of developing a modified 5-inch/62 caliber gun and precision guided munitions with a 41-63 nautical mile range and a land attack missile for the current classes of destroyers and cruisers. The Navy and the Marine Corps stated that they need naval gunfire support to these ranges to meet current requirements. The gun and precision guided munition are expected to reach operational capability<sup>2</sup> in fiscal year 2002. The Navy expects the Land Attack Standard Missile to reach operational capability in fiscal year 2003. The long-term phase consists of developing more lethal and longer range guns, projectiles, and missiles.

Navy officials state that they plan to remove the battleships from the NVR as soon as they can certify that the performance of the gun, projectiles, and missiles being developed equals or exceeds that of the battleships. Navy officials believe their development programs will achieve operational capabilities between fiscal year 2003 and 2008 and then they will be able to make the required certification.

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## Agency Comments

In written comments, DOD concurred with a draft of this report (see app. I). DOD also provided technical clarifications that we incorporated as appropriate.

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## Scope and Methodology

To determine the extent of the Navy's compliance with the requirements of section 1011 of the National Defense Authorization Act for Fiscal Year 1996, we:

- interviewed officials and obtained documentation from the Office of the Secretary of Defense, the Secretary of the Navy, the Naval Sea Systems Command, and its subordinate activities;
- inspected the *U.S.S. Iowa*, the *U.S.S. New Jersey*, and the *U.S.S. Wisconsin* and discussed their condition with officials from the

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<sup>2</sup>Initial operational capability is the first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system.



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Headquarters, Navy Inactive Fleet, and subordinate maintenance activities in Bremerton, Washington, Newport, Rhode Island, Portsmouth, Virginia, and Philadelphia, Pennsylvania;

- reviewed documentation regarding the condition of the battleships from the Office of the Secretary of the Navy; and
- viewed and received briefings and documentation on 16-inch ammunition production facilities and ammunition, propellant, and parts storage facilities at NSWC Crane; ammunition and spare gun barrels stored at the Hawthorne Army Ammunition Plant; and spare gun barrels located at Dahlgren, and Norfolk, Virginia.

We conducted our review from July 1998 through December 1998 in accordance with generally accepted government auditing standards.

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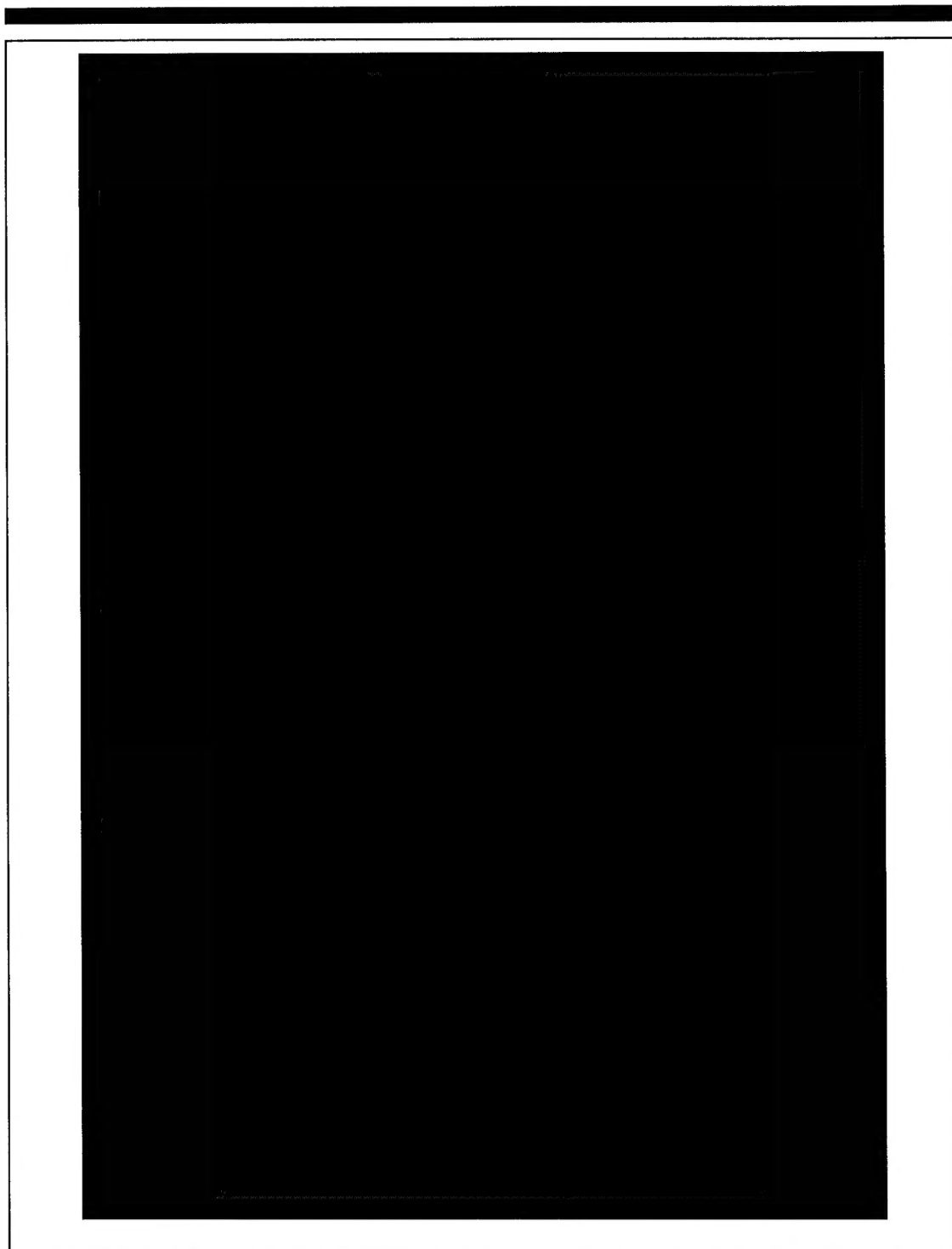
We are also sending copies of this report to Senator Ted Stevens, Chairman, and Senator Robert C. Byrd, Ranking Minority Member, Senate Committee on Appropriations; Representative C. W. Bill Young, Chairman, and Representative David R. Obey, Ranking Minority Member, House Committee on Appropriations. We are also sending copies of this report to the Honorable William Cohen, Secretary of Defense; the Honorable Richard Danzig, Secretary of the Navy; the Honorable William J. Lynn, Under Secretary of Defense (Comptroller); and the Honorable Jacob Lew, Director, Office of Management and Budget. Copies will also be made available to others upon request.

Please contact me at (202) 512-4841 if you have any questions about this report. The major contributors to this report are listed in appendix II.



James F. Wiggins  
Associate Director  
Defense Acquisitions Issues

# Comments From the Secretary of Defense



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# Major Contributors to This Report

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National Security and  
International Affairs  
Division, Washington,  
D.C.

Martha J. Dey  
Jack G. Perrigo, Jr.  
Richard J. Price

---

Office of General  
Counsel, Washington,  
D.C.

Stephanie J. May

---

Norfolk Field Office

Anton G. Blieberger

---

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